

What is claimed is:

1. A manual throttling system for electronically controlling the speed (RPM) of
an engine, comprising:
5 a housing;

a dial plate having first and second sides, a center, a multiplicity of openings each
spaced a selected radial distance from a center of the dial plate and being connected
10 to the housing;

a control knob connected to the housing and to the dial plate at said dial plate center,
said dial plate and control knob being rotatable relative to the housing and said dial
plate being rotatable in response to rotation of the control knob;
15 a light source connected to the housing and being positioned on the first side of the
dial plate adjacent the dial plate openings;

a detector connected to the housing and being positioned adjacent the second side of
20 the dial plate and being adapted to receive light pulses passing from the light source
through the dial plate openings and delivering signals (A) and (B) responsive
respectfully to the speed and direction of dial plate rotation and frequency of the
light pulses; and

a microprocessor connected to the detector and being adapted to receive signals (A) and (B) and deliver an engine speed controlling signal (C) responsive to the direction and speed of dial plate rotation and the frequency of light pulses.

- 5 2. A throttling system, as set forth in claim 1, wherein the dial plate, the light source, and the detector comprise an optical encoder.

3. A throttling system, as set forth in claim 2, wherein the detector of the encoder is a two channel detector.

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4. A throttling system, as set forth in claim 1, wherein the detector is a two channel detector, each channel producing a respective digital signal (A) and (B) with said signal (A) being out of phase with said signal (B)

- 15 5. A throttling system, as set forth in claim 4, wherein the microprocessor is adapted to determine the direction of rotation of the control knob and dial plate in response to the phase difference between said signals (A) and (B).

6. A throttling system, as set forth in claim 5, wherein the microprocessor is adapted
20 to change the speed of the engine at a rate relative to the rate of rotation of the dial plate.

7. A throttling system, as set forth in claim 5, wherein the microprocessor is adapted
25 to increase the speed of the engine in response to rotation of the dial plate in a first direction and decrease the speed of the engine in response to rotation of the dial plate in an opposed second direction.

8. A throttling system, as set forth in claim 7, wherein the microprocessor is adapted to change the speed of the engine at a rate responsive to the rate of rotation of the dial plate.

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9. A throttling system, as set forth in claim 1, including a switch connected to the housing and to the microprocessor and being adapted to deliver a signal (D) to the microprocessor and responsively reducing the engine speed to an idling speed.

10 10.. A throttling system, as set forth in claim 9, wherein said switch is a position-sensing switch.

11. A manual throttling system for electronically controlling the speed (RPM) of an engine from a location remote from the primary controls of the engine of a vehicle, comprising:

- 5 a housing remotely positioned from primary controls of the engine;

a dial plate having first and second sides, a center, a multiplicity of opening spaced a preselected radial distance from a center of the dial plate and being rotatably connected to the housing;

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a control knob is connected to the housing and to the dial plate at the dial plate center, said dial plate and control knob being rotatable relative to the housing and said dial plate being rotatable in response to rotation of the control knob;

- 15 a light source connected to the housing and positioned on the first side of the dial plate adjacent the dial plate openings;

a two channel detector connected to the housing and being positioned adjacent the second side of the dial plate and adapted to receive light pulses passing from the light source through the dial plate openings and delivering signals (A) and (B) responsive respectfully to the speed and direction of dial plate rotation and the frequency of light pulses, said signal (A) being out of phase with said signal (B); and

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a microprocessor connected to the detector and being adapted to receive signals (A) and (B) and deliver an engine speed controlling signal (C) responsive to the direction and speed of dial plate rotation and the frequency of light pulses, said
5 microprocessor being adapted to automatically resetting the engine controlling signal (C) to idle speed of the engine in response to shutting down the engine.

12. A throttling system, as set forth in claim 11, wherein the microprocessor is adapted to determine the direction of rotation of the control knob and dial plate in response to the phase difference between said signals (A) and (B) and the direction of rotation of the control knob and dial plate increases the speed of the engine in response to rotation in a first direction and decreases the speed of the engine in response to rotation in a second direction.